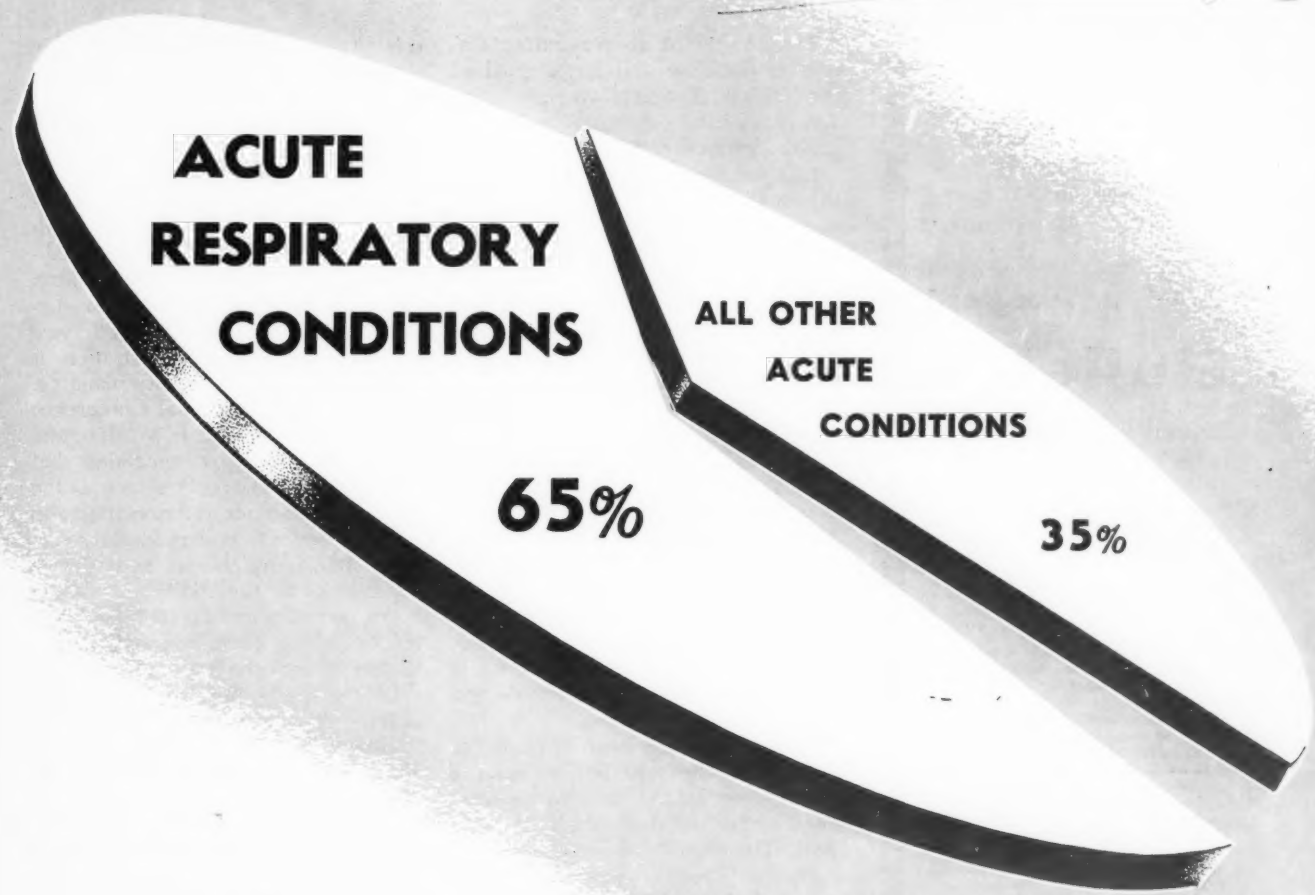
FEBRUARY 1959

Bulletin

NATIONAL TUBERCULOSIS ASSOCIATION



Acute Conditions—These Requiring Medical Attention or Restricting Activity, July, 1957, to June, 1958, in the U.S.—*National Health Survey*

—And Millions More Each Year Suffer from Chronic Respiratory Diseases

NATIONAL
TUBERCULOSIS
ASSOCIATION

Bulletin

ELLEN LOVELL
Editor

GRACE JACKSON
Managing Editor

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The Challenge of Respiratory Diseases

The control of all respiratory disease is the new and larger goal of the National Tuberculosis Association and its affiliates.

Needless to say, the complete eradication of tuberculosis remains the primary function of each and every one of the Christmas Seal organizations throughout the United States. However, as Dr. James E. Perkins points out in the article on the opposite page, success in our primary purpose will be achieved more quickly and more certainly by the expansion of our program to include all respiratory diseases.

The magnitude of the problem of respiratory diseases is presented in detail in this issue by Donald A. Trauger, director of the NTA's Social Research Division. The morbidity and mortality from these diseases are so great that it is difficult to measure their impact on our society. It is even more difficult to imagine living in a world free of respiratory disease. Such a goal staggers the imagination.

The work to be done is challenge enough for the most industrious and courageous among us. No one yet knows how we shall reach this new goal. The variety of respiratory diseases and the number of possible avenues of attack present us with innumerable possibilities for action.

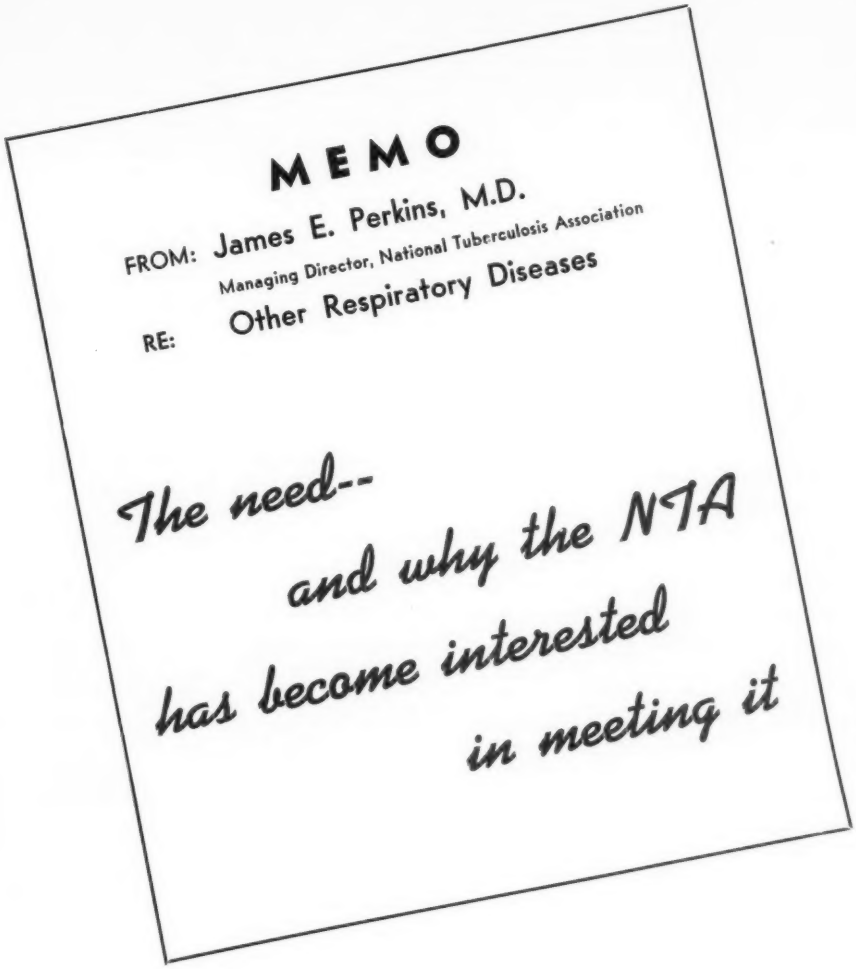
The NTA Committee on Respiratory Diseases has begun to consider this problem and has made a few suggestions for the initiation of our respiratory disease program.

Much has to be learned about etiology, incidence, prevalence, therapy, and differential diagnosis. The committee suggests that greater research be done in these areas, with emphasis on setting up pilot coordinated studies throughout the country. Certainly, greater cooperation between the U. S. Public Health Service and the Veterans Administration is needed for joint community planning.

At the recent National Conference on Air Pollution, held in Washington, D. C., the group recommended that voluntary health agencies such as the National Tuberculosis Association and affiliates begin to undertake the seemingly infinite number of activities in the field of air pollution.

Air pollution and cigarette smoking are becoming increasingly significant factors of concern, especially as they relate to the chronic respiratory diseases.

Now more than ever before, we shall need leadership, imagination, courage, and industriousness in our fight. These same qualities that have made possible our progress toward the elimination of tuberculosis will give us strength for the campaign of the future. — **David T. Carr, M.D.,** *chairman, NTA Committee on Respiratory Diseases*



Now that the Committee on Respiratory Diseases of the National Tuberculosis Association, the American Trudeau Society, and the National Conference of Tuberculosis Workers has held its second meeting, and all of us have had an opportunity to delve more thoroughly into the potentialities of the various diseases which either affect the respiratory system or are acquired through that system, I feel more convinced than ever that the decision of the NTA Board of Directors to extend our activities into this field was a sound one.

Tuberculosis associations, whether or not they were consciously aware of it, have been engaging in some aspects of this broader field as an inevitable part of their attempts to control tuberculosis. Concern for the control of tuberculosis necessarily involves interest in the specific, diverse components of respiratory diseases as a whole, such as silicosis, influenza, chronic bronchitis and emphysema, and lung tumors; and interest in certain broad public health programs, such as the establishment and the maintenance of adequate health departments and school health programs, rehabilitation programs, and control of air pollution and infection.

Because of the prominent part respiratory diseases play in the general chronic disease problem and in the ill health of the aged, interest in respiratory diseases necessarily means an interest in chronic disease control programs and programs designed for the aging. I am not concerned, therefore, when I hear that one tuberculosis association is taking a special interest in a local program for the control of chronic diseases, and another is taking a special interest in a program for the aging population. This is not wandering aimlessly from the problem of tuberculosis and other respiratory diseases. Programs for chronic illness and health problems of the aged overlap to a very large extent; both are important from the standpoint of tuberculosis, which is progressively becoming a relatively more important problem among our older citizens; and, finally, both necessarily will be concerned to a major extent with other respiratory diseases, since these diseases are so prominent in chronic form among older people.

Tuberculosis workers interested in chronic illness and health problems of older people will also inevitably have to take an interest in the more acute respiratory diseases in younger people, since just as serious tuberculous disease later in life is usually the result of infection much earlier in life, so many of the chronic respiratory diseases of later years are due to acute respiratory illnesses experienced earlier in life.

Reasons for Our Interest

Several points, I think, are often misunderstood with regard to our going into this field. These relate to the reason why we have gone into this area, and the potentialities of this area of interest, both from the standpoint of importance to the American public and the interest which we may expect the people of this country to show in our attempts to correct a badly neglected public health problem.

The immediate, primary reason for our extending further into this field of respiratory diseases is to enable us to complete the job of eradicating tuberculosis. Every committee which has considered this matter of extension of our program has stressed that our primary function is to complete the job of TB eradication. I do not need to repeat in this article the numerous facts showing the continued seriousness of the tuberculosis problem, but I should like to stress that the importance of tuberculosis varies markedly in different communities and is going to vary still more in the future as we continue to meet with success in our tuberculosis program. If this were not so it might be prac-

tical, and perhaps a very salutary thing, to stick to tuberculosis control just as closely as possible, and to fold up the organization when the job is completed. But the job is not going to be completed everywhere in one fell swoop; it is going to be accomplished piecemeal, in one area after another, over a considerable span of time.

I want to stress that this further extension into other respiratory diseases certainly is not a desperate attempt to "maintain jobs," or to have some continuing "cause" for financing by the successful Christmas Seal Sale device. Over three years ago in a document I prepared as background material for representatives of the NTA, the ATS, and the NCTW delving into this question of the advisability of extension of program, I pointed out that our voluntary tuberculosis movement "machine" is comprised of thousands of units, each one of which is an individual human being; and I stressed that the individuals making up this machine are changing constantly, with turnover in staff, rotation in officers and members of boards of directors, and changes in research workers and teaching fellows supported by grants. In other words, this is not a static machine, like some complicated power tool which can be transferred from the workroom of one factory into the workroom of another.

I mentioned this to stress that there was no reason in the deliberations of that group for any undue concern about maintaining the machine. Individuals comprising the current machine have in many instances served in similar capacities in other voluntary and official health organizations, and many previous workers in our movement are now serving other health agencies. Very few current personnel would have any problem at all in fitting into other agencies which need the sort of trained personnel we have in our organization.

I also stressed in that document that the success of the Christmas Seal Sale should also be ignored in the deliberations, since there would be no difficulty whatever in working out an arrangement by which the Christmas Seal Sale could serve the interests of some other voluntary agency, rather than our thinking we had to undertake additional problems merely to preserve the Christmas Seal Sale for continued service to mankind.

The decision, therefore, on the part of that group, and subsequently adopted by the NTA Board, to extend our interests to other respiratory diseases was not on either of these two bases, but, as I have stated, to assure the completion of our goal of eradication of tuberculosis, plus to heed the crying need for the attention of a voluntary health organization to the problem of respiratory diseases as a whole, of which tuberculosis is a part.

Importance of Respiratory Diseases

In the following article in this issue of the BULLETIN, Donald Trauger, director of the NTA's Social Research Division, presents data showing the importance of this area. He indicates that even according to the very unsatisfactory criterion of deaths, this group of diseases ranks fourth in importance. This fact may be a surprise even to experienced public health administrators, because these deaths are scattered among various classifications in the official international list and are not brought into one group of diseases, in contrast, for example, with the various diseases grouped under the category of heart disease.

But as Mr. Trauger points out, morbidity data are even more impressive than mortality data. According to the National Health Survey, from July, 1957, through June, 1958, 65 per cent of all acute conditions experienced by those interviewed were due to respiratory diseases. ("Acute conditions" are defined as departures from a state of physical and mental well being, exclusive of minor affairs which involve neither restricted activity nor medical attendance.) In addition, respiratory illnesses accounted for millions of cases of *chronic* illness.

Respiratory diseases form the great group of diseases in which control has lagged compared with the tremendous advances made in the control of diseases due to the infection or pollution of water supplies, milk supplies, and food, or due to transmission through insects. Where effective vaccines have become available, much progress has been made with regard to those scattered, individual specific diseases; but there is a limit to the number of types of microorganisms one can put into a vaccine and shoot into a human being, and one is also constantly thwarted by the evolution of new types of microorganisms. Hence, with regard to employing vaccines against some of these diseases, such as influenza, one is always locking the stable after the horse is stolen.

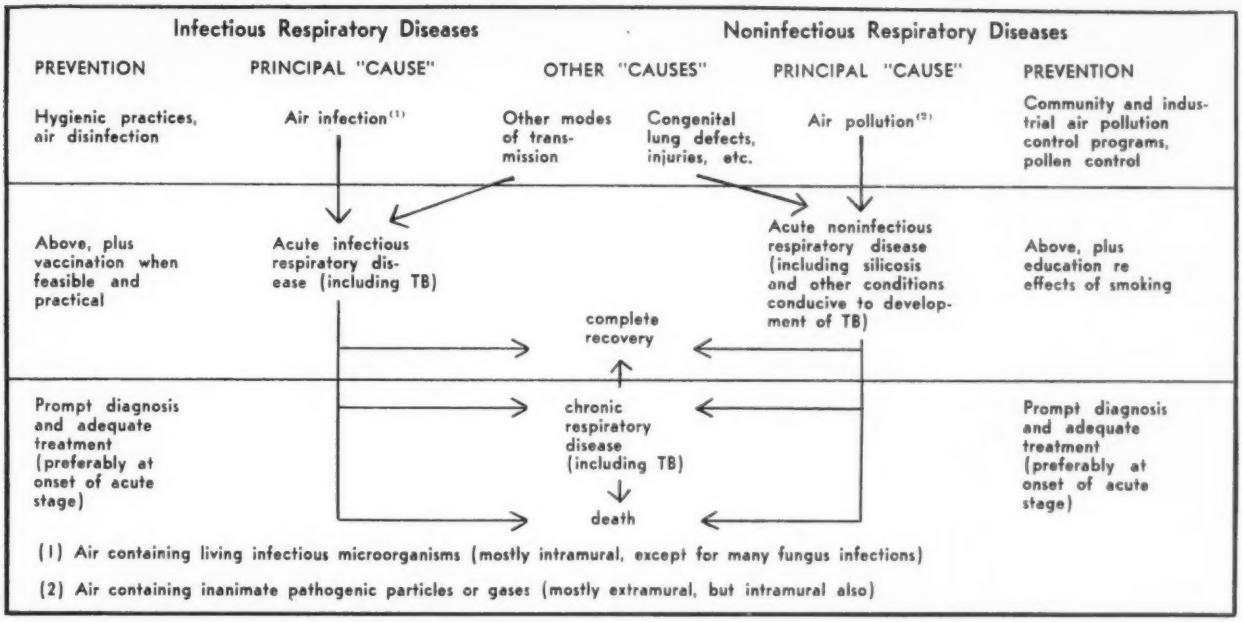
Although we certainly shall continue to use vaccination against various respiratory diseases for many years to come, I believe that ultimately we shall reach the daring point of view that in most instances such use of vaccines is a temporary expedient until we are able to solve the more complex problem of the control of infection of air, just as we have been successful in controlling the infection and pollution of water, milk, and food. We used to try to vaccinate entire communities against typhoid fever, but now that we have cleaned up our water, milk, and food supplies through sanitation procedures, typhoid vaccine is no longer used en masse.

This relationship of air infection and air pollution to acute respiratory diseases and in turn to chronic respiratory diseases, including tuberculosis, is indicated in the accompanying chart.

Ultimate Goal?

Although, as I say, we shall not reduce in any way our continued attempts to eradicate tuberculosis, and even though the immediate, primary objective of going into the control of other respiratory diseases is to enable us to complete the eradication of tuberculosis, the point may well be reached later on when this more expanded program will become an objective in itself, and merit the continued functioning of our particular voluntary health organization (even in the absence by then, perhaps, of a serious tuberculosis problem) until we have solved these admittedly extremely complex and difficult problems of successful and permanent control of air infection and air pollution.

I think the evidence is overwhelming that the people of this country


Infectious Respiratory Diseases
Noninfectious Respiratory Diseases
PREVENTION
PRINCIPAL "CAUSE"
OTHER "CAUSES"
PRINCIPAL "CAUSE"
PREVENTION
Hygienic practices, air disinfection
Air infection(1)
Other modes of transmission
Congenital lung defects, injuries, etc.
Air pollution(2)
Community and industrial air pollution control programs, pollen control
Above, plus vaccination when feasible and practical
Acute infectious respiratory disease (including TB)
Acute noninfectious respiratory disease (including silicosis and other conditions conducive to development of TB)
Above, plus education re effects of smoking
complete recovery
Prompt diagnosis and adequate treatment (preferably at onset of acute stage)
chronic respiratory disease (including TB)
death
Prompt diagnosis and adequate treatment (preferably at onset of acute stage)
(1) Air containing living infectious microorganisms (mostly intramural, except for many fungus infections)
(2) Air containing inanimate pathogenic particles or gases (mostly extramural, but intramural also)

are tremendously interested in this broader problem. One can scarcely pick up a paper today without seeing some reference to the question of air pollution. The public may be less concerned at the moment about those diseases which are produced primarily through the infection of air within enclosed atmospheres, but this is merely because they have come to believe that little or nothing can be done about this problem, and that mankind is doomed to suffer forever from colds, attacks of influenza, pneumonia, and the many other infections of the respiratory tract transmitted primarily through the air in enclosed atmospheres such as schools, offices, and other places of common congregation. I don't believe it. Enough good studies have been conducted to show that this may not be inevitable, although, admittedly, further research is necessary before one is justified in doing such things as promoting mass installations of air-disinfection devices.

Nor am I intimidated by alarmist cries of dire consequences resulting from producing an exquisitely susceptible population through such control procedures; I heard the same cry when we were becoming successful in controlling typhoid fever and other "inevitable" illnesses of mankind in which there was supposed to be an "irreducible minimum." The irreducible minimum in tuberculosis and other communicable diseases (and many noncommunicable diseases as well) is *zero!* At least we should assume so and work toward that end.

I am not discouraged by the fact that much research is necessary before we can put into effect many programs of the practical sort to which tuberculosis associations have long been accustomed in the tuberculosis field. We must remember that even those tuberculosis control programs had to await the research involved leading to the discovery of the tubercle bacillus. Most of the other large voluntary health agencies today are in the same position with regard to their problems as we are with regard to other respiratory diseases – namely, somewhat limited as to practical community programs until research has given more answers for practical application. However, there are many practical programs in the control of respiratory diseases which can be put into effect today, as indicated elsewhere in this issue.

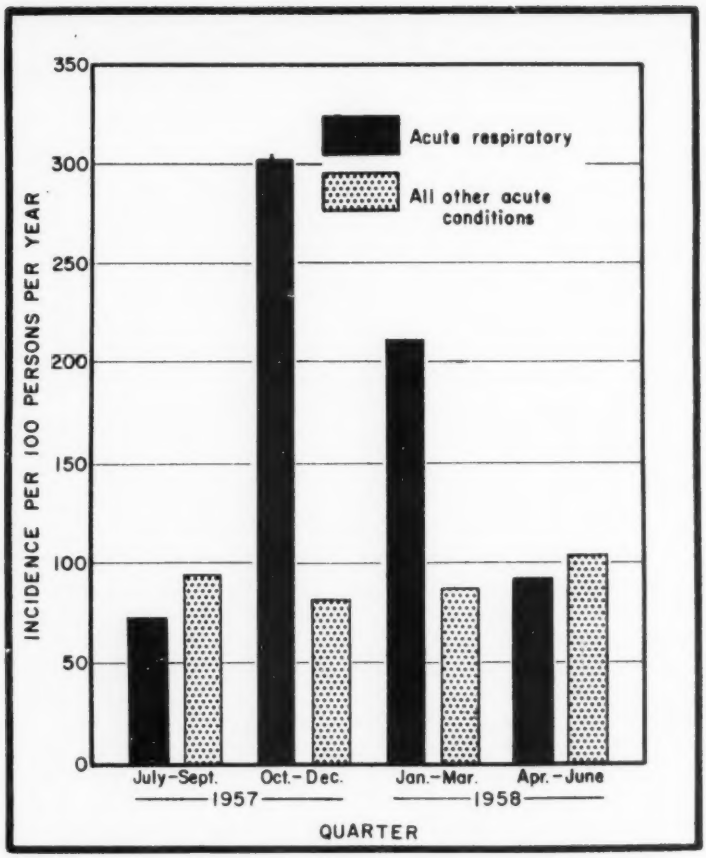
I am a little surprised to be told by some that state and local tuberculosis associations are marking time, waiting for detailed blueprints in this area from the national office. There is no doubt that with more support, the national office could give more leadership than it is giving. Even without such support, it will give all the leadership possible in this field within the limits of its small staff and restricted budget—that is, short of the point of jeopardizing its activities in the strictly tuberculosis field, which *must* receive priority.

The NTA stands ready to give suggestions and ideas to states and locals that are willing and able to "pioneer" once again. As in the past, we must look to our affiliated associations to experiment with a variety of programs in this broad area of respiratory diseases. The NTA cannot initiate a blueprint based on theory—but rather must work together with states and locals to gain experience in practical program approaches, including research, fact-finding studies, promotion of legislation, and education.

In the beginning, the NTA's role must be one of stimulation, guidance, and consultation, so that we may gain experience. Later, the NTA will be able to share information and ultimately to suggest programs to the field at large based upon the early experimental pioneering of a few courageous and imaginative affiliates. This new program area will develop soundly only as we work together and share in the "leadership role."

THE EXTENT OF RESPIRATORY DISEASES

By Donald A. Trauger



The first and last thing a man does is draw a breath. Once begun, breathing becomes an activity that cannot be interrupted, except for short periods of time, without resulting in death. The National Tuberculosis Association includes in its concern with respiratory illness all illnesses which impair this function, as well as all diseases believed to be "caught" as a result of breathing or which manifest themselves in the respiratory system.

Death certificates provide one source of statistical information about the extent of the problem. This source is, at least, virtually complete and is accurate within the limits of medical judgment. All states in the Union require the filing of a death certificate containing a physician's statement as to the probable cause of death before a human body can be disposed of, and all jurisdictions provide for at least the semblance of an inquest in connection with deaths resulting from violence or deaths not attended by a physician. One way of measuring the extent of the problem is to study the number of deaths classified as resulting from such diseases. Other systems of classification developed for other purposes do not correspond to the NTA definition and are usually less inclusive.

Currently, the group of diseases related to the heart and circulatory system has become captain of the men of death. More than half the deaths during the period 1954-1956 can be grouped under the broad heading of disease and failure of the cardiovascular system. There are no close seconds. Disease due to malignant neoplasms, even when deaths in the respiratory and buccal system are included, accounted for about one death out of six in the same period. Deaths from diseases of the respiratory system (NTA classification) accounted for almost a tenth of all deaths—an average of 142,600 a year during 1954-1956. In comparison, deaths due to accidents and to suicides combined accounted for about one death out of 14. Diseases of early infancy accounted for about one death out of 24.

The great progress made in reducing infant mortality and deaths from infective disease may obscure the fact that some diseases are on the upswing. During the four-year period 1953-1956, there was a consistent increase in deaths from many diseases, including the following respiratory ill-

Mr. Trauger is director, Social Research Division, National Tuberculosis Association. His article was solicited by the Committee on Medical and Public Relations of the American Trudeau Society.

nesses: malignant neoplasms of the respiratory system and buccal cavity, emphysema without bronchitis, and chronic interstitial pneumonia.

There is no point in minimizing the importance of the cluster of respiratory diseases which ranks fourth among causes of deaths, but it is as a cause of illness, rather than as a cause of death, that respiratory diseases assume full stature.

Morbidity statistics must be regarded with a bit more caution than mortality data. The distinction between illness and wellness is not as distinct as that between life and death. There is no legal basis for reporting the great bulk of respiratory illness, and much such illness transpires without medical diagnosis or attention, so that nationwide statistics reported on a case basis are lacking.

Since the middle of 1957, the new National Health Survey has provided a source of data hitherto available for only small segments of the population. Periodically, a sample of the United States population is asked, among other things, whether they have been ill in the preceding two weeks. They are also asked for specific information about each condition reported. Published statistics employ several distinct measures of illness or "conditions," and *unless the user of such statistics keeps these distinctions carefully in mind, confusion is almost certain to result.*

Statistics are published regarding days of restricted activity due to illness, days in bed due to illness, and days absent from work or school on account of illness. Illness defined in terms of restricted activity provides the broadest definition and shows the largest totals. Some series of statistics provide data separately for acute and for chronic conditions. A minor acute condition which did not involve medical attention or cause restriction of activity is excluded.

According to a recent National Health Survey report, the acute respiratory conditions, such as colds, influenza, and pneumonia, are the most frequent of all acute conditions. They vary considerably in incidence according to the season, as shown in the chart at left, reproduced from the National Health Survey. In the winter months, respiratory conditions accounted for more illness than all other acute conditions combined. In other periods of the year, respiratory conditions accounted for more than 40 per cent of all conditions reported.

The year covered includes the Asian-type influenza epidemic of 1957-1958, and it will be noted that during one three-month period, respiratory conditions were occurring at the rate of more than 300 per 100 persons per year. Because these attacks are acute, and are due to various specific causes, and often provide little or no subsequent immunity, an individual can be attacked again and again.

The American Trudeau Society will co-sponsor a postgraduate course on "The Measurement of Pulmonary Function in Health and Disease," to be given at Boston City Hospital, March 23-27, for physicians interested in chest diseases. The tuition is $75. Applications and more detailed information may be obtained from the chairman of the course: Edward J. Welch, M.D., 1101 Beacon St., Brookline 46, Mass.

Can these illnesses be dismissed as "just a cold or a cough"? This depends upon how far one looks ahead. A recent announcement by the University of Pittsburgh Graduate School of Public Health shows that people who were ill during the Donora, Pa., smog episode in 1948 had subsequent death and disease rates substantially higher than those experienced by persons not affected by the smog.

Some clinicians believe that respiratory systems weakened by one attack of respiratory illness become, thereby, less able to resist subsequent attacks, and that respiratory illnesses which are not considered especially serious taken one at a time may become killers when taken in combination. The pneumonias and the influenzas alone constitute the sixth leading cause of death in the United States, and it is common knowledge that many illnesses which terminate in death began with "just a cold."

When one considers an entire year, acute respiratory illness accounts for two-thirds of all incidence of acute conditions, as shown by the chart on the cover of this issue of the BULLETIN.

Days of restricted activity due to acute respiratory conditions can also be viewed against the background of all days of restricted activity resulting from all acute and chronic conditions. Acute respiratory conditions were responsible for the greatest number of the four types of disability days for the period July, 1957, through June, 1958. Acute respiratory conditions accounted for about 1,172 million days of restricted activity, 593 million days of bed disability, 219 million days lost from work, and 196 million days lost from school.

How do the respiratory illnesses rank among chronic illnesses? It must be noted that the definition of chronicity excludes the repeated incidence of a single disease during a short period of time. It may be anticipated that all figures for chronic respiratory conditions will be substantially lower than those for acute conditions.

The National Health Survey check list of chronic conditions included, among others, asthma, any allergy, tuberculosis, chronic bronchitis, repeated attacks of sinus trouble, and rheumatic fever, as well as cancer or tumor, some of which may be presumed to involve the respiratory system. Survey data have shown that as of August, 1957, 69 million people had one or more chronic conditions and that one-fourth of them had some limitations of activity as a result of these conditions.

How many of these conditions can be classed as respiratory is not yet known, but evidence from other studies suggests that the number will certainly be in the millions.

Variations Not Known

Solid evidence of variations in mortality and morbidity from respiratory conditions is not available. Some evidence shows that the incidence of acute episodes varies with age, and some specific conditions may vary with sex. It may be assumed that variation occurs with altitude, amount of air pollution, smoking habits, and climate. These variations may exist in considerable magnitude and need further study to assist in formulating a sound program of control of respiratory illnesses.

Panel members at the NTA institute on respiratory diseases listen to a question from the audience about potential program activities. Left to right are Dr. Carr, Mrs. King, Miss Boyd, Mr. Stone, Dr. McDermott, Mr. Osborn, and Mr. Lifson.

NTA Institute on Respiratory Diseases

By Morris Barrett
Associate, Program Development Division
National Tuberculosis Association

On November 24, 25, and 26, 90 National Tuberculosis Association professional staff and state and local tuberculosis association representatives attended a program on "Epidemiology of Respiratory Diseases," at the New York City Health Department.

The purpose of this pilot two-and-one-half-day session, as stated in the program, was "to acquaint the National Tuberculosis Association professional staff with the broad field of respiratory diseases, to give basic information on specific respiratory diseases and in particular those with relatively high morbidity and mortality rates, and to present program possibilities in respiratory diseases for tuberculosis associations."

The Professional Training Committee on Respiratory Diseases of the NTA staff, who planned the program, was aware that it was impossible to discuss the numerous respiratory diseases in the time available, so that certain diseases and categories were selected for presentation.

The first speaker was Richard L. Riley, M.D., associate professor of medicine, Johns Hopkins Medical School, Baltimore, Md. He discussed research, conducted at the Veterans Administration Hospital in Baltimore, which has shown that tuberculosis germs are transmitted through the air in minute droplet nuclei, which float on air currents. The experiment was conducted by channeling air from a ward of infectious tuberculosis patients to a chamber on the floor above where guinea pigs were housed. Another experiment showed that the spread of infection could be prevented, or markedly reduced, by irradiating the air with ultraviolet light.

Dr. Riley said, "History may well repeat itself in the case of air-borne infection. The need for measures to control respiratory contagion is so great that people may not wait for the specialists to make up their minds about the relative value of different approaches. The idea of breathing pure air sounds reasonable to a great many people, engineering technique is capable of providing pure air, and attempts at air purification on a vast scale are very likely to come. Intelligently interpreted, these efforts can teach us much more about respiratory contagion. Furthermore, sooner or later, they will lead to the public health man's dream—the control of epidemic respiratory contagion."

Among those participating in the NTA respiratory disease institute, designed to provide NTA staff with background information in this field, were Dr. Perkins, Dr. Feldmann, Dr. Riley, Dr. Jeanes (Canadian TB Association), and Dr. Kilbourne.

This was followed by a discussion of fungus diseases, by Harry Rubin, M.D., of Mount Sinai Hospital, New York City. Dr. Rubin stated that the fungus infections closely resemble tuberculosis in all its forms and are relatively newly recognized diseases. He stressed the need for both lay and professional education. These diseases are not spread from man to man and are often indistinguishable from tuberculosis in symptoms and findings, but skin and serologic tests are available to help in differential diagnosis. The discussion dealt mostly with histoplasmosis, blastomycosis, and coccidioidomycosis.

During the afternoon, Edwin D. Kilbourne, M.D., director, Division of Virus Research, Cornell University Medical College, and abstract editor, THE AMERICAN REVIEW OF TUBERCULOSIS AND PULMONARY DISEASES, discussed the acute respiratory diseases. He pointed out that acute respiratory diseases are responsible for an average of ten illnesses per person per year, six of which are communicable respiratory diseases. Numerically, they constitute a major health problem.

Much remains to be learned about the acute respiratory diseases, and the questions far outnumber the answers. Extensive study and research are needed. Vaccines have been effective with certain of the acute respiratory diseases, but only under limited circumstances. With the limited knowledge we have today, vaccination cannot be considered as the answer to most of the acute viral infections for the general population. In the opinion of Dr. Kilbourne, effective control of these diseases appears to depend more upon individual action than on public or community action. He recommended that emphasis be placed on improving personal understanding, attitudes, and behavior.

On the second day, Albert Roberts, M.D., chief, Clinical Investigation, Air Pollution Medical Program, Special Health Services, U. S. Public Health Service, discussed air pollution as it affects the respiratory system. He stated that acute air pollution can cause death among the aged and those suffering from chronic lung disease. It is possible that irritants present in air can cause changes in the tissues of the respiratory tract and affect breathing. Still unproved, but suggestive, is the assumption that air pollution contributes significantly to mortality rates of many diseases, including cardiovascular diseases, lung cancer, bronchitis, and emphysema.

The effect of air pollution on human health seems to be of three types: The first is the "acute episode" resulting from a highly toxic man-made atmospheric condition combined with a weather condition called "thermal inversion" (a "lid" over a community bottling up pollutants to the point of dangerous concentration).

The second type is more difficult to observe and document; this includes the long-term effects of breathing polluted air. Mortality for a number of respiratory diseases is considerably higher in the urban areas, linking this strongly to air pollution.

A third type is the acute and temporary irritation of the eyes and the respiratory system. This is exemplified by the Los Angeles episodes of eye irritation, which appear to cause little permanent damage and lie somewhere between a health and a nuisance problem.

David T. Carr, M.D., assistant professor, Mayo Clinic, Rochester, Minn., and M. Henry Williams, Jr., M.D., Cardio-Respiratory Laboratory, Grasslands Hospital, Valhalla, N. Y.,

discussed the chronic respiratory diseases. Research appears to be the chief need for this group of diseases, which are characterized by shortness of breath, cough, and airway obstruction. Chronic bronchitis and emphysema appear more frequently among males over 40, and seem closely associated with cigarette smoking and air pollution. These diseases include, in addition to chronic bronchitis and emphysema, bronchiectasis, sarcoidosis, lung cancer, pneumoconioses, lung abscesses, broncholiths (or lung stones), and asthma.

On the third day, a report on mortality from respiratory diseases was given by Donald A. Trauger, director, NTA Social Research Division. Mr. Trauger reported that deaths from respiratory diseases as a group decreased in the four years from 1953 through 1956 by more than 4,000, from 152,427 to 148,155, but that malignant neoplasms of the respiratory system increased more than 6,000 in these four years, or over 20 per cent. The only other specific diseases to show a consistent upswing through the four years were emphysema (this may be a reflection of improved diagnosis) and "other" chronic interstitial pneumonia.

In 1957 (the year of the Asian influenza epidemic) from a 10 per cent sample of death certificates, pneumonia and bronchitis deaths were up approximately 20 per cent, and influenza deaths were up more than 200 per cent over 1956. These data are the latest available.

These increases, as well as the steady increase in neoplasms, will probably bring the 1957 total of deaths due to respiratory diseases beyond that of 1953, the largest total in the previous four-year period.

Diseases of the respiratory system, as classified by the National Tuberculosis Association, are the fourth leading cause of death and account for 9.4 per cent of all deaths, based on a three-year (1954-56) annual average.

Program Possibilities

To answer the question "What are the program possibilities for tuberculosis associations in respiratory diseases?" a panel discussion was held to conclude the program. The panel consisted of moderator James G. Stone, NTA executive secretary; Miss Clarissa Boyd, director, NTA Program Development Division; Dr. Carr; Dr. Walsh McDermott, chairman, Department of Public Health and Preventive Medicine, Cornell University Medical College, New York City, and editor, THE AMERICAN REVIEW OF TUBERCULOSIS AND PULMONARY DISEASES; Robert W. Osborn, executive secretary, State Committee on Tuberculosis and Public Health, State Charities Aid Association, New York City; Mrs. Augusta B. King, executive secretary, New Jersey Tuberculosis and Health Association; and Sol S. Lifson, director, NTA Health Education Division.

After a lively two-hour interchange of ideas and thoughts, the panel outlined potential program areas for tuberculosis associations. In the area of the acute respiratory diseases, the panel suggested the following program needs:

1. Research in developing new effective vaccines, especially for diseases that have serious complications.
2. Further research into the causes of upper respiratory infection and the development of vaccines against the common cold, the adeno-virus infections, and others.
3. Promotion of educational programs for vaccination against many of the diseases where vaccines are now available.
4. Intensification of an educational program on good personal hygiene and good nutrition, as a means of preventing or reducing the seriousness of respiratory diseases.
5. Further research in controlling air-borne transmission of respiratory diseases, with special reference to ultraviolet irradiation and disinfectant vapors.

In the area of chronic respiratory diseases, with special reference to chronic bronchitis and emphysema, the panel considered the need for:

1. Medical research, including defining these diseases in specific medical terms, establishing criteria for diagnosing these diseases, and finding methods of treatment and prevention.
2. Professional education of physicians and other professional personnel.
3. Further research and educational programs in terms of the relationship of cigarette smoking to chronic bronchitis and emphysema.
4. Knowledge of the relationship of air pollution to these conditions.
5. Epidemiological research on the incidence of chronic bronchitis and emphysema.
6. Rehabilitation services for persons suffering from chronic respiratory diseases.
7. Promotion of legislation on the state level to allow appropriate hospital beds to be used for patients with chronic respiratory diseases other than tuberculosis.

Turning to the area of fungus diseases, the panel emphasized that case-finding tools similar to those being used in tuberculosis programs could be adapted to fungus diseases. They recommended:

1. Professional education with regard to differential diagnosis.
2. Promotion of multiple skin testing in endemic areas of fungus diseases.
3. Promotion of chest X-ray and serologic testing of positive reactors.

As for air pollution, it was brought out that definite knowledge is lacking on the relationship between air pollution and diseases of the respiratory system. Suggestions for possible programs were:

1. Promotion of research on the effects of air pollution on humans.
2. Development of methods and techniques of controlling air pollution and promoting health education programs within the community.
3. Stimulation of local and state health departments to establish local air pollution programs in their areas.
4. Development of necessary legislation and regulations to enable local and state agencies to carry out enforcement activities wherever necessary.

The program closed with Dr. James E. Perkins, managing director, National Tuberculosis Association, reviewing the highlights of the meeting. He also illustrated for the audience his concept of the interrelationship between infectious and noninfectious, and acute and chronic, respiratory diseases. (See his article in this issue.)

Perhaps the big question we can ask ourselves is "Where do we go from

here in respiratory disease programs, in view of our limited knowledge?"

It is quite evident that in order to do a more effective job in tuberculosis control, tuberculosis associations must concern themselves with other respiratory diseases, especially those resembling or having a direct relationship to tuberculosis. In addition, the size of the problem would indicate that it is large enough to merit the serious attention of the National Tuberculosis Association and its affiliated associations.

From the information available about respiratory diseases, programs in this area would be concerned primarily with the promotion of research and the development of educational programs disseminating the knowledge currently available. This is similar to the current situation with regard to other major health problems, such as heart disease, cancer, and mental illness. With research and education as current program priorities, it seems logical that more concrete community activity for tuberculosis associations will be forthcoming in this area as research points the way.

NTA Board Committees

. . . their purpose and functions

Respiratory Diseases The newest of the National Tuberculosis Association Board committees, and one that faces a particularly challenging assignment, is the Committee on Respiratory Diseases. This group is charged with responsibility for studying the entire field of respiratory diseases, on a continuing basis, and for charting new respiratory disease programs for national, state, and local tuberculosis associations.

The committee was established to implement the action of the NTA Board of Directors, taken on May 25, 1956, when it adopted a report of the Policy Committee on program extension, which reads as follows:

> That effective action should be taken immediately by the National Tuberculosis Association to assist those state and local associations wishing to implement the policy adopted by the Board of Directors of the National Tuberculosis Association on May 16, 1954, making the field of pulmonary disease an integral part of the program of the National Tuberculosis Association and its affiliates, and that this program should be extended to include the entire field of respiratory diseases.

In connection with this continuing study, the committee will from time to time inform the NTA Board, by direct reports or through the managing director, about the practicality and advisability of establishing or stimulating respiratory disease control programs that may be proposed by the staff or by other groups, such as the American Trudeau Society or the National Conference of Tuberculosis Workers, and will suggest additional programs that it feels might fruitfully and appropriately be conducted by the NTA and/or its constituent and affiliated associations.

The committee has nine members: Don A. Warner, Omaha, Nebr. (NTA); Oscar A. Sander, M.D., Milwaukee, Wis. (NTA); David T. Carr, M.D., Rochester, Minn. (ATS); Roger S. Mitchell, M.D., Denver, Colo. (ATS); M. J. Plishner, Jamaica, N.Y. (NCTW); J. Irvin Nichols, Lansing, Mich. (NCTW); Robert J. Anderson, M.D., Atlanta, Ga. (at large); Richard L. Riley, M.D. (at large); and Leonard Greenburg, M.D., New York, N.Y. (at large).

To help the NTA Committee on Respiratory Diseases carry out its recommendations and to implement its suggestions, a **Planning Committee on Respiratory Diseases,** consisting of NTA division directors and associates, was created in 1958.

This group is responsible for promoting, and guiding the NTA in carrying out, programs and activities in respiratory diseases in conjunction with the policies established by the NTA Committee on Respiratory Diseases.

Through subcommittees, it will assist in promoting demonstration programs in the field, planning professional training programs for the NTA staff and the field, and planning the development of informational and educational materials on respiratory diseases. The committee will also assist in developing a process for evaluating respiratory disease activities and programs.

The Planning Committee members are James G. Stone, NTA executive secretary; Floyd Feldmann, M.D., NTA medical director; Frank Webster, ATS executive secretary; Ralph Susman, director, Rehabilitation Division; Arthur Eisenberg, rehabilitation associate; Donald Trauger, director, Social Research Division; Eleanor Connolly, social research associate; Sol Lifson, director, Health Education Division; Edward Sierks, health education consultant; Gerald English, director, Personnel and Training; Hugh Adams, training administrator; Clarence Kehoe, director, Seal Sale Division; Miss Betty Leman, Seal Sale associate; Robert Weymueller, NCTW executive director; Miss Jean South, director, Tuberculosis Nursing Advisory Service; Miss Ruth Leininger, TNAS nursing education consultant; Miss Clarissa Boyd, director, Program Development Division; George Williams, program development associate; Morris Barrett (chairman), program development associate; Miss Ellen Lovell, director, Public Relations Division; and Miss Agnes Fahy, science writer.

To implement the work of the Planning Committee, three subcommittees have been created, most of whose members are on the Planning Committee. Each of these committees will work in cooperation with the other

respiratory disease committees and assist in carrying out recommendations and suggestions of the NTA Committee on Respiratory Diseases.

The Field Service Committee is responsible for helping to organize respiratory disease programs for constituent and local TB associations. Through field studies, the committee will develop program guidelines in a specific area of respiratory disease and explore sources for the financial support of these activities. The committee will be available to TB associations that are ready and willing to develop a demonstration program, using the basic tools of tuberculosis control.

The members of the Field Service Committee are Miss Alice Wagner (chairman), program development associate; Mr. Barrett*; Dr. Feldmann; Mrs. Winifred Johnson, Seal Sale associate; Mr. Lifson; and Mr. Trauger.

The Professional Training Committee is responsible for planning, and assisting in carrying out, professional training programs on respiratory diseases for NTA staff. In addition, it may assist in planning professional training programs for field workers interested in promoting respiratory disease activities. These programs will include workshops, seminars, institutes, etc., that will provide preservice and inservice experiences in the broad field of respiratory diseases.

The members of the Professional Training Committee are Mr. Adams (chairman); Mr. Barrett*; Mr. Eisenberg; Carl Peter, health education associate; and Mr. Williams.

The Information Committee is responsible for assisting and advising in the development of informational and educational materials in the field of respiratory diseases. The committee will also aid in developing, promoting, and reviewing community-wide publicity and informational programs on state and national levels.

The members of the Information Committee are Miss Fahy (chairman); Mr. Barrett*; Miss Connolly; and Jules Saltman, health education associate.

*ex officio

International TB Symposium

A call for eradication of tuberculosis from the entire world was made by Dr. James E. Perkins, managing director of the National Tuberculosis Association, at the International Symposium on Tuberculosis sponsored by the Deborah Sanatorium and Hospital, in Philadelphia, November 20, 21, and 22.

The symposium brought together scientists from all over the United States, Canada, England, France, Norway, and Denmark for a discussion of the use of drugs in preventing tuberculosis; the role of the hospital and home in the management of tuberculosis; the question of relapse during and after treatment; case finding; surgical aspects of treatment; and the problem of tuberculosis control in the future.

The NTA, the American Trudeau Society, the American College of Chest Physicians, the Delaware Anti-Tuberculosis Society, the New Jersey Tuberculosis and Health Association, and the Pennsylvania Tuberculosis Society cooperated in arrangements for the symposium. The program was planned by a committee headed by Dr. George N. J. Sommer, Jr., of Trenton, N. J., and Dr. Charles P. Bailey, chairman of the Deborah Medical Board. Proceedings of the scientific sessions will be published as a special supplement of a forthcoming issue of THE AMERICAN REVIEW OF TUBERCULOSIS AND PULMONARY DISEASES.

In calling for global eradication, Dr. Perkins defined this goal as one of having "no human being on this earth react significantly to a skin test with a proper dosage of a standardized tuberculin; in other words, total bacteriological eradication."

Stating that he had no illusions as to the magnitude of the problem, Dr. Perkins expressed confidence, however, that eradication could be accomplished, and suggested that the World Health Organization, which thus far has given priority to malaria control, now take on "tuberculosis eradication as another goal to receive primary attention."

"There will come a time, I am sure, so long as I am not pinned down to a date," he said, "when tuberculosis will have been banished from the earth. There will be a time when young couples can bring their children into this world with no fear of their being exposed to this frightening disease. . . . We must assume that it can occur and have the faith to work diligently to see that a concentrated international program is put into effect toward that end."

SCIENTISTS AT WORK

pH

This is the symbol that the chemist uses to denote the acid-alkaline content in body fluids. It is a symbol used to flash important signals to the doctor, particularly during surgery.

pH has its own scale, its "middle C" being 7.0, which is the pH of water. From this neutral point, variations toward alkalinity are noted upward, while those toward acidity are indicated on a downward scale. Each body fluid has its own normal point, which is not necessarily the neutral point. For example, the normal pH for blood is 7.4.

(The little "p" is for potential, and the big "H" is for hydrogen, because the acidity-alkalinity measurement is based on a formula for determining hydrogen ion concentration in the fluid.)

pH plays an important part in studies under way at the Presbyterian Hospital of the College of Physicians and Surgeons, Columbia University, New York City, which are being supported in part by a medical research grant from the National Tuberculosis Association and the American Trudeau Society.

The studies are being carried on in the Department of Anesthesiology under the direction of Duncan A. Holaday, M.D., associate professor of anesthesiology, who wants to know what mechanisms are involved when acidosis develops in a patient under anesthesia and who is also testing the efficiency of various methods of artificial respiration during anesthesia.

The end result of the studies will be to make surgery safer, not only during the procedure, but also in possible aftereffects. Dr. Holaday and his group are particularly interested in cardiopulmonary surgery and its effect on respiration. However, the respiratory-circulatory system is a key point in all surgery, for the cells of the body cannot survive if their supply of oxygen is cut off, and even a brief interruption in circulation may cause irreparable damage.

Sometimes patients under anesthesia have difficulty in expelling carbon dioxide (CO_2) properly, and an accumulation of CO_2 in the blood may cause a change in the metabolic pattern leading to acidosis. Thus, at intervals during surgery, samples of blood are analyzed for a pH determination. Even a slight deviation below 7.4 is a danger sign, and immediate steps must be taken to restore the acid-alkaline balance.

Just what happens to cause this metabolic disturbance is not known, but experiments with animals conducted by Dr. Holaday suggest that CO_2 retention interferes with an enzymatic action in the liver, and also starts a chain reaction that results in the accumulation of organic acids in other tissues in the body.

A graduate of the University of Chicago School of Medicine, Dr. Holaday had special training in physiology before anesthesiology captured the attention of his inquiring mind. Later, he took a special course in pharmacology, so that he would have more than a reading knowledge of the drugs used to put patients to sleep and kill pain during surgery. In studies under the NTA-ATS grant, he and his associates are testing various drugs in a careful search for agents that will cause as little change as possible in the normal rhythm of the respiratory system and will not cause a drop in the acidity of the blood below . . .

pH 7.4—A.S.F.

BULLETIN BRIEFS

NLN to move. The National League for Nursing, which includes the Tuberculosis Nursing Advisory Service, will move during the middle of this month from its present quarters to the New York Coliseum, 59th St. and Columbus Circle, New York 19, N. Y. The TNAS is financed by a grant from the National Tuberculosis Association.

New TB history. *House of Open Doors* is the story of the Wisconsin Anti-Tuberculosis Association's 50-year crusade to find, treat, and conquer tuberculosis. Written by Harold Holand, who joined the WATA in 1930 and is now director of its social research and publications departments, the 257-page hard-cover book can be obtained from the Wisconsin Anti-Tuberculosis Association, 1700 Wells St., Milwaukee 1, Wis., for $3.50 a copy.

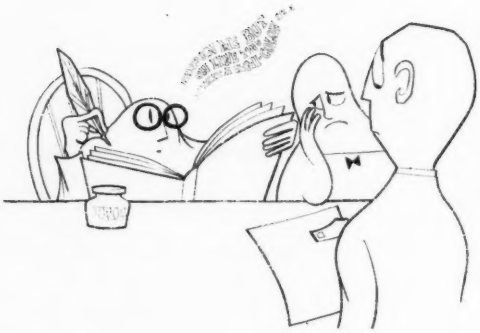
Nursing Scholarships. The Eight and Forty is continuing its Tuberculosis Nursing Scholarship Fund, of $1,000 each, to help nurses secure advanced preparation for positions in either supervision, administration, or teaching. Requirements and application forms can be obtained from the American Legion, Education and Scholarship Committee, Box 1055, Indianapolis 6, Ind. The deadline for scholarship applications for the 1959-60 school year is June 1, 1959.

Pulmonary disease course. The 44th session of the Trudeau School of Tuberculosis and Other Pulmonary Diseases will be held at Saranac Lake, N.Y., June 8-26. In addition to the faculty of local tuberculosis hospitals, about 30 leading teachers and investigators will lecture or conduct seminars in their special fields. Approximately half of the three-week course will be devoted to tuberculosis; the other half will be divided between such subjects as silicosis, pulmonary fibrosis, emphysema, fungus infection, and sarcoidosis. All inquiries should be sent to the Secretary, Trudeau School of Tuberculosis and Other Pulmonary Diseases, Box 500, Saranac Lake, N.Y.

How to Wreck a

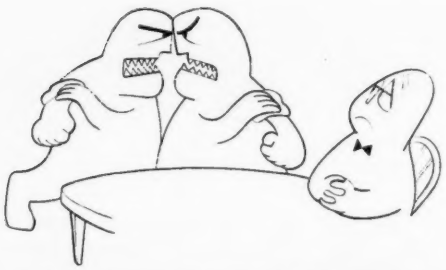
If you're chairman . . .

Call the meeting without notice.



If you've compiled 10 pages of advance information that was sent to everyone, read it aloud and explain the footnotes.

Squelch any new approach not outlined on the agenda.



Let Sam and Joe debate their personal differences for the length of the meeting, thus providing good clean entertainment for all.

Or, insist that Sam and Joe are really in agreement, and prove it by misquoting both of them. This will unite them in an attack on you.

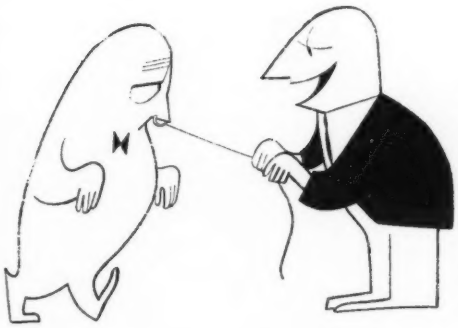
Change the decisions reached at the meeting—but don't let the others know. (It might hurt their feelings.)

ck a Meeting

If you're a participant . . .

Let the chairman do all the work. It's his meeting.

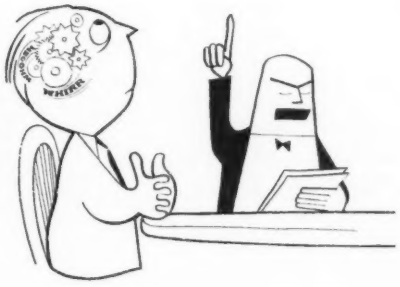
Defend yourself! Anyone who openly disagrees with your viewpoint probably has it in for you.



Ask leading questions, as: "You surely aren't casting doubt, are you, on the validity of the Zwibelfoos Survey?" They'll agree, to avoid admitting they haven't heard of the survey, but the meeting will sour from this point on.

Take careful notes on everything, including date, time, temperature, and barometer reading. If you don't catch every word that's said, ask for a recap.

Don't listen to others; they will only confuse you. Use the time while they're talking to think up your next remarks.



Side with the majority, regardless of your real opinion.

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Text by Lydia Strong
Drawings by Al Hormel

After-Hours Plans Under Way for NTA Annual Meeting

The Committee on Local Arrangements for the 1959 Annual Meeting of the National Tuberculosis Association, to be held in Chicago May 25 to 29, 1959, has its work well under way. This year, according to Herbert C. De Young, the chairman, a new approach is being pursued. With so many things of educational, informational, scientific, and cultural interest available in Chicago, as well as those of a purely entertainment character, events for those attending the meeting will be scheduled for each afternoon and evening. "Our visitors," said Mr. De Young, "will therefore be afforded the opportunity of attending a program session or doing something else, as they choose."

There will be an organized "fun night" on Wednesday evening. Further details will appear in future issues of the BULLETIN.

Where the place to be visited is some distance from the Chicago Loop, the committee will make arrangements for transportation by bus. The program will include visits to tuberculosis sanatoriums and other facilities of particular interest to medical men; to the Midwest Stock Exchange, the Chicago Board of Trade, and some of the Loop banks for those interested in finance; to various museums, the Art Institute, and libraries; to some business and manufacturing firms; and to other particular points of interest located in Chicago and environs. There will also be events of special interest to the ladies and a hospitality room at the Palmer House.

The members of this committee are Eugene T. McEnery, former president of the Chicago Medical Society; Walter C. Kurz, advertising manager, the *Chicago Tribune;* Mrs. Richard D. Culver and Mrs. Frank S. Sims (all members of the board of directors of the Tuberculosis Institute of Chicago and Cook County, the host association); John E. Egdorf, executive director of the Institute, and Mrs. Ruth Meany, director, Administrative Services, of the Institute; Patrick H. Hoy, president, Ambassador East, Inc., representing the board of directors of the Municipal Tuberculosis Sanitarium; Edwin B. Berndtson and Dr. Edward A. Piszczek, attorney and field director, respectively, for the Suburban Cook County Tuberculosis Sanitarium District; Dr. Karl Pfuetze, medical director, Illinois State Tuberculosis Hospital; Dr. George Turner, president-elect, Chicago Medical Society, and medical director, Oak Forest Institutions; and Ben D. Kiningham, Jr., executive director, the Illinois Tuberculosis Association.

George W. Dixon, Jr., general chairman for the 1959 meeting and ex officio member of the committee, said, "I know that hundreds of people are looking forward to an excellent meeting and a most enjoyable time. I am certain that the Local Arrangements Committee is doing all it can to see that their expectations are realized."

People

Mrs. Rosselle W. Huddilston, who had been a member of the Board of Directors of the National Tuberculosis Association from 1942 to 1956, died on December 11, at the age of 84.

Warren W. Furey, M.D., clinical professor at the Stritch School of Medicine, Loyola University, Chicago, and immediate past president of the Tuberculosis Institute of Chicago and Cook County, died on November 19.

Herbert J. Hackenburg, Jr., formerly director of community relations for the Montgomery County (Ohio) Tuberculosis and Health Association, has been appointed a field counselor for the Ohio Tuberculosis and Health Association.

Mrs. Goldie B. Bartholomew, R.N., recently resigned as executive secretary of the Carbon County (Pa.) Tuberculosis and Public Health Society, a position she had held since the society's founding 15 years ago. **George D. Aubrey** has been appointed to succeed her.

Hubert R. Slack, formerly a lieutenant in the United States Navy, has joined the program consultation staff of the Rhode Island Tuberculosis and Health Association. Mr. Slack will plan, organize, and conduct programs in health education, case finding, rehabilitation.

ER.C.RICHARD SMITH
1301 CHAVEZ RAVINE RD
LOS ANGELES 26,CAL.
AT5-2991

DR. C. RICHARD SMITH
1301 CHAVEZ RAVINE RD
LOS ANGELES 26, CAL.